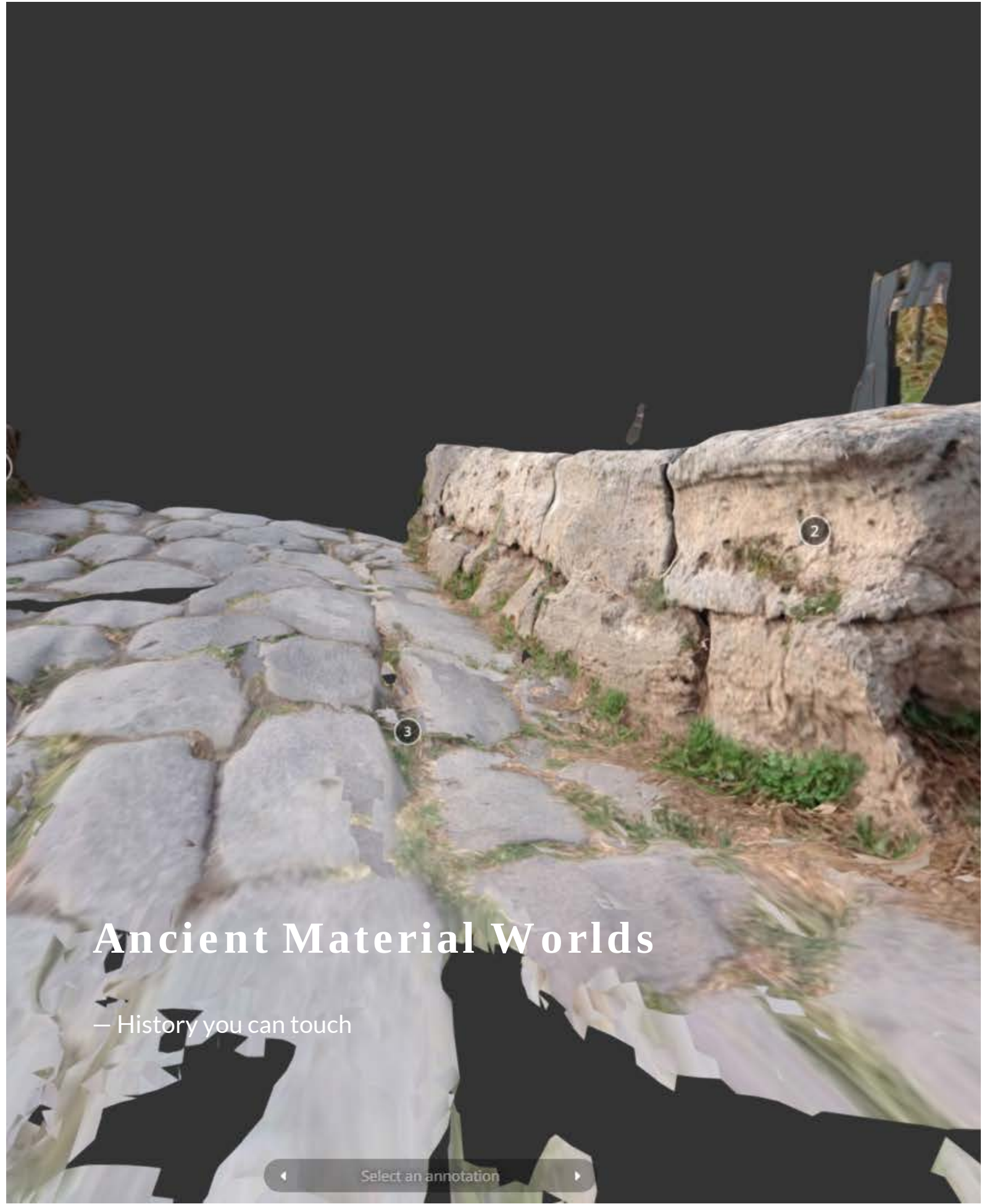




Assignment #5: Curb Wear and Cart Design.

One of the first things visitors to Pompeii remark upon are the ruts worn deeply into the pavements. Even Mark Twain, in “[Innocents Abroad](#)” put his own humorous ‘twist’ on these ruts:

But no—the sun shines as brightly down on old Pompeii to-day as it did when Christ was born in Bethlehem, and its streets are cleaner a hundred times than ever Pompeiiian saw them in her prime. I know whereof I speak—for in the great, chief thoroughfares (Merchant street and the Street of Fortune) have I not seen with my own eyes how for two hundred years at least the pavements were not repaired!—bow ruts five and even ten inches deep were worn into the thick flagstones by the chariot-wheels of generations of swindled tax- payers? And do I not know by these signs that Street Commissioners of Pompeii never attended to their business, and that if they never mended the pavements they never cleaned them? And, besides, is it not the inborn nature of Street Commissioners to avoid their duty whenever they get a chance? I wish I knew the name of the last one that held office in Pompeii so that I could give him a blast. I speak with feeling on this subject, because I caught my foot in one of those ruts, and the sadness that came over me when I saw the first poor skeleton, with ashes and lava sticking to it, was tempered by the reflection that may be that party was the Street Commissioner.

Less funny are the new mythologies that have grown up around the ruts, including a story that they were the source of [the peculiar gauge of the](#)

[American railroad](#) of 4 feet, 8.5 inches wide. But there have also been many serious attempts – e.g., Tsujimura, [Sillieres](#), Pike, Kaiser – to measure these artifacts and to use them to better understand vehicles, traffic, transport industries, and infrastructures. Recently, I have applied the measurements of ruts to the question of Roman vehicles in order to argue that while there is not a single standard distance between the wheels, Roman carts were built with some standards in mind.

This summer, it occurred to me that there is another – though considerably rarer – form of evidence from vehicles that might speak to this issue of standardization: the wear caused by [the ends of the axles hitting the curbs](#). While ruts show the distance between wheels, axle wear shows its height above the pavement and thus the diameter of the wheel. Is there the same similarity in the size of wheels as there is in the distance between them? One of the best places to see this is at the Porta Nocera, where carts entering the city hit against the high curbs and left a rounded groove in the vertical face of the stones as you can see in this model.

Therefore, in this assignment, students will use [a collection](#) of four 3D models captured on-site with the [Structure Sensor](#), to measure the range of of the wear on these curbs. Because [Sketchfab](#), fab in so many other ways, does not yet offer tools for making measurements, we will use those tools available in 3D activated PDFs. Here are the models*:

- [Via_Nocera_1](#)
- [Via_Nocera_2](#)
- [Via_Nocera_3](#)
- [Via_Nocera_4](#)

*If you have difficulty downloading, [try this zip](#). If you can't view these, try [adobe acrobat reader](#) (it's free), which is different than Adobe Reader.

Each student will make measurements and comments within each of the four models themselves as well as estimating the maximum, minimum, and average sized wheel that could have made these wearing patterns. [This spreadsheet](#) will be useful in recording and tabulating your results. Additionally, students will measure the width and length of ruts worn into via Nocera. [A tutorial](#) of how to make measurements and comments will be give on Dec. 1st. Completed pdfs and estimates are due via email with attachments before class on Dec. 6th.



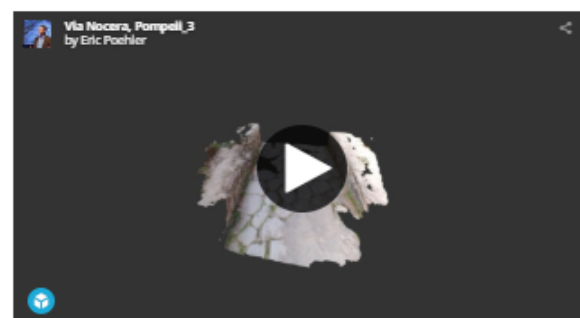
[Via Nocera, Pompeii_1 by Eric Poehler on Sketchfab](#)



[Via Nocera, Pompeii_4 by Eric Poehler on Sketchfab](#)



[Via Nocera, Pompeii_2 by Eric Poehler on Sketchfab](#)



[Via Nocera, Pompeii_3 by Eric Poehler on Sketchfab](#)

Spreadsheet for tabulating measurement results

Hub Wear tab

Hub Wear Measurements					
Measurement Number	Measurement in meters	Measurement in Roman Feet	Measurement from	Measurement to	Measurement Notes
1	0.342	1.16			
2		0.00			
3		0.00			
4		0.00			
5		0.00			
6		0.00			
7		0.00			
8		0.00			
9		0.00			
10		0.00			
11		0.00			
12		0.00			
13		0.00			
14		0.00			
15		0.00			
16		0.00			
17		0.00			
18		0.00			
19		0.00			
20		0.00			

Comments on size of cart wheels:

Spreadsheet for tabulating measurement results

Rut Measurement tab

Rut Measurements					
Measurement Number	Measurement in meters	Measurement in Roman Feet	Measurement from	Measurement to	Measurement Notes
1	0.342	1.16			
2		0.00			
3		0.00			
4		0.00			
5		0.00			
6		0.00			
7		0.00			
8		0.00			
9		0.00			
10		0.00			
11		0.00			
12		0.00			
13		0.00			
14		0.00			
15		0.00			
16		0.00			
17		0.00			
18		0.00			
19		0.00			
20		0.00			

Comments on ruts and cart gauges:

Spreadsheet for tabulating measurement results

Other Measurements tab

Other Measurements					
Measurement Number	Measurement in meters	Measurement in Roman Feet	Measurement from	Measurement to	Measurement Notes
1	0.342	1.16			
2		0.00			
3		0.00			
4		0.00			
5		0.00			
6		0.00			
7		0.00			
8		0.00			
9		0.00			
10		0.00			
11		0.00			
12		0.00			
13		0.00			
14		0.00			
15		0.00			
16		0.00			
17		0.00			
18		0.00			
19		0.00			
20		0.00			

Other Comments